NEW LABORATORIES AT QUEEN'S COLLEGE, BELFAST.

ON Friday last, September 20, the buildings recently erected to provide much needed additional accommodation for the scientific departments of Queen's College, Belfast, were formally opened. These buildings include the Donald Currie laboratory and lecture-room for chemistry, the Musgrave laboratories for pathology and bacteriology, the Jaffé laboratory for physiology, the Harland laboratories of physics and engineering, and rooms for the departments of biology, pharmacology, and surgery.

Lord Kelvin had promised to visit the city of his birth and early life in order to perform the opening ceremony. Unfortunately, a few days before the date fixed, the sudden and serious illness of Lady Kelvin made it impossible for him to fulfil his engagement. Lord Kelvin sent to Belfast the text of the address which he had prepared for the occasion, and this was read to the meeting by his nephew, Mr. James Thomson, whose father, Prof. James Thomson, formerly occupied the chair of engineering in the college. The buildings were declared open by Sir Otto Jaffé, chairman of the committee in charge of the "Better Equipment Fund," and a prominent benefactor of the college. The meeting was afterwards addressed by Sir Christopher Nixon, vice-chancellor of the Royal University of Ireland, and by Prof. Letts.

In the beginning of his address Lord Kelvin traced the development of university education in Belfast from the foundation, about 1815, of the "Academical Institution," of which the collegiate part was afterwards merged in the Queen's College. He expressed the hope that the college would soon receive the full status of an independent university After enumerating the laboratories to be opened on that day, the address proceeded as follows:—

Now that you have them open and ready for use, what are you going to do with them? Your chiefs in the different departments, professors, assistant professors, assistant workers, and students, will, I am sure, soon give very good and useful answers to that question. None of your chiefs will be likely to follow the example of a good old university professor of a bygone age in the sister island, who was the happy official possessor of many very fine and costly instruments, in which he took great pride. He devoted himself whole-heartedly to keeping them in order.

Your seven laboratories extend over the whole field of lifeless matter and of matter associated with life. We may be sure that in none of them will there be any lack of useful occupation. Personally, I need hardly say, I envy most the workers in the laboratories of physics, chemistry, and engineering.

At the present stage of the era which commenced with Henri Becquerel's discovery of radio-activity in salts of uranium and in metallic uranium, the very thought of physics and chemistry, a now united science, compels us to think of radium, in which Madame Curie discovered the element of Becquerel's wonderful radiation. I hope the physical and chemical laboratories of Queen's College, Belfast, will try to find if the radium element does occasionally explode into fragments. If they find that it does, the laboratories will, I trust, hold an official conference with the professors of Greek and logic, and come to a conclusion whether or not it is a convenient fiction to call the radium element an atom. It may remain quite convenient to continue calling radium an element. Indeed, I well remember a time in Belfast when we used to call earth, air fire, and water "the four elements."

Whatever may betide, I hope the physical and chemical laboratories of Queen's College will be full of radio-activity until we have more intimate knowledge of radium than we have of iron, with its magnetic quality.

I have many happy recollections of Queen's College in the 'fifties and 'sixties, when my brother was professor of engineering there. What would he not have given for the admirable and useful engineering laboratory of which Queen's College takes possession to-day?

I have somewhat later recollections of Queen's College, full of personal and scientific interest, when Thomas Andrews was making his immortal discoveries in it regarding the continuity of the gaseous and liquid states, now celebrated throughout the scientific world. I well remember, too, his showing me, on a promisingly practical scale of magnitude, the electrical transmission of power through a pair of copper wires, from one Gramme dynamo driven by hand to another taking the work from it. No doubt Andrews showed this to his students at a time when, by most engineers and scientific men, engineering applications of electromagnetism were looked on as chimerical fancies of ingenious, non-practical professors or other weak persons. Who can say whether the seed thus sown, about 1870, or 1871 or 1872, through university action in the north of Ireland, may not have germinated in the Portrush electric railway, which has given to Ireland the first historic title to the utilisation of water-power by electric transmission to many miles, instead of to a few yards, as shown to the students of Queen's College in Andrews's lecture-room?

PROF. L. F. VERNON-HARCOURT.

THE death of Prof. Vernon-Harcourt, following so soon after that of Sir Benjamin Baker, not only deprives the civil engineering profession of another illustrious member, but leaves experimental science the poorer for the loss of one of her most devoted sons. The branch of civil engineering work with which Prof. Vernon-Harcourt was most closely associated was that concerned in the maintenance and construction of waterways. Harbours, docks, rivers, canals—all and everything, in fact, which appertains to the provision and improvement of routes and termini for water-borne traffic is included under this head. In this special domain Prof. Vernon-Harcourt was an acknowledged authority, and the treatises thereon which came from his pen, and the opinions which he expressed, invariably carried with them that conviction which is the rightful due of sound knowledge and ripe experience.

He came of distinguished ancestry. The son of an admiral, the grandson of an archbishop, he could scarcely fail to leave his mark in any profession he might take up. A brilliant career at Oxford (he graduated in 1861 with a first class in mathematics, and the following year in natural science) was followed by three years of steady, persevering study in the practice of civil engineering under the late Sir John Hawkshaw. Then came ten years of responsible executive work, first at the South-West India Dock, then on Alderney Breakwater, on Rosslare Harbour, and the railway to Wexford. Finally, in 1878, he established himself as a consultant, with offices in Westminster, and four years later he was appointed professor of civil engineering at University College, London. His active connection with University College was maintained practically up to the time of his death.

Prof. Vernon-Harcourt will perhaps be best remembered by his writings, which have won for their author a deserved and unquestioned reputation. In 1882 appeared "Rivers and Canals" (second edition, 1896), followed in 1885 by "Harbours and Docks," in 1891 by "Achievements in Engineering," and in 1902 by "Civil Engineering as applied to Construction." All these works are characterised by lucidity of style and soundness of thought, and they are to be found to-day on the bookshelves of most practising engineers. In addition thereto, Prof. Vernon-Harcourt contributed to the "Encyclopædia Britannica," and wrote copiously for various learned societies—the Institution of Civil Engineers, the Royal Society, the

Society of Arts, and the International Association of Navigation congresses. He was president of the mechanical section of the British Association meeting of 1895, and a number of distinctions were conferred upon him from time to time, including a commandership of the Imperial Franz-Josef Order of Austria-Hungary, in recognition of his services on an International Jury on Canal Lifts.

There is no novel or startling departure in theory or practice, no gigantic masterpiece of constructive skill, associated with Prof. Vernon-Harcourt's career, but his name will long be held in respectful remembrance by those who can understand and appreciate the solid and enduring character of his unobtrusive work. His investigations in 1886 in regard to the Seine estuary, and the patient care with which, from a number of artificial models, he deduced the probable effect of various systems of training works, commanded the attention and interest of the profession, such that his position as an expert authority on fluvio-maritime works henceforward became preeminent. In 1896 he made an inspection of the River Hooghli, and drew up for the Calcutta Port Commissioners a valuable report on the means of improving the navigable channel. Only last year he was consulted by the Mersey Docks and Harbour Board in regard to certain training works proposed for the estuary of the Mersey.

Prof. Vernon-Harcourt did not reach the allotted span of man, and the announcement of his death at the age of sixty-eight is received on all hands with unfeigned expressions of sorrow and regret.

NOTES.

THE celebration of the centenary of the Geological Society of London is to commence this morning with a reception of delegates by the president, Sir Archibald Geikie, K.C.B., F.R.S., at the Institution of Civil Engineers. The history of the society is traced in a review which appears elsewhere in this number, and we hope to give an account of the centennial celebrations in our next issue. The president will deliver an address this afternoon on the state of geology at the time when the Geological Society was founded, and a banquet will be held at the Hôtel Métropole this evening. To-morrow will be chiefly devoted to visits to museums, galleries, &c., concluding with an evening reception at the Natural History Museum. On Saturday, short excursions will be made to places of geological interest within easy reach of London; and on Monday the visitors will divide into two sections, one of which will go to Oxford, the other to Cambridge. At both universities there will be further hospitalities, and honorary degrees will be conferred upon a few of the guests.

THE fourteenth International Congress of Hygiene and Demography was opened at Berlin on Monday in the presence of the Crown Prince and representatives of the Diplomatic Corps, the Prussian Ministry, the Berlin Municipality, and other official bodies. The congress was formally welcomed in the name of the Emperor William by the Prussian Minister of the Interior, Herr von Bethmann-Hollweg.

THE Scottish Arctic Expedition under Dr. Bruce arrived at Tromsö on September 22, all well. Dr. Bruce's companion, Mr. H. Johansen, will stay at Spitsbergen for the winter, together with Mr. Lerner. The *Times* correspondent at Ottawa reports that Dr. Stefansson, of the Anglo-American Arctic Expedition, has arrived at Victoria. He left Captain Mikkelsen and the other members of the expedition well on Herschel Island in July.

A CONFERENCE for the purpose of discussing subjects connected with the work of museums and art galleries and kindred institutions will be held at the Royal Museum and Art Galleries, Salford, on Friday, October 18, and will be attended by members of the Museums Association and other persons interested in museum work.

THE Berlin correspondent of the *Globe* states that during the ensuing four months, that is, from now to January 15, the German Army authorities intend to carry out an important series of experiments in wireless telegraphy at Metz and Strassburg, and at the six leading fortresses of Königsberg, Thorn, Danzig, Posen, Cologne, and Mainz. One thousand reservists, who have served as military telegraphists, have been called up to work with the military telegraphists now serving with the Army.

SPEAKING at Liverpool on September 19, at the Liverpool Imperial Products Exhibition, Mr. Haldane, M.P., again took the opportunity of urging the importance of a scientific foundation for our Empire. He reminded his hearers that the secret of prosperity, the secret of winning the fruits of the earth, lies in mind, in knowledge, and in the direction applied to the energies which abound around us, and can be turned to the service of man. What is true of ordinary industry is true of the great enterprise of making the best of the possibilities of those vast tracts of the world which constitute the British Empire.

THE official results of the International Balloon Race of September 15 show that six balloons travelled more than 800 kilometres before descending. The following particulars are given, among others:—

Order	Name of Balloon	Cubic capacity, metres	Nationality	Hour of ascent	Hour of descent	Distance travelled, kilometres
				Sunday	Monday	
1	Pommern ...	2,200	Germany ...	17 48	22 30	935
2	Le Cognac	1,700	Switzerland ...	18 02	18 03	870
3	Zéphir ...	2,200	Great Britain	17 09	17 30	860
4	Britannia ...	2,200	Great Britain	17 43	18 06	840
5	Bamler ...	1,437	Germany ...	18 37	18 30	830
6	Milano ...	2,000	Italy	17 07	14 30	810

THE autumn meeting of the Iron and Steel Institute was opened at Vienna on Monday in the hall of the Austrian Society of Engineers and Architects. The Ministers of Commerce and Agriculture, with their Under-Secretaries of State and many prominent officials, as well as the general managers of the principal Austrian iron works, were present to welcome the institute. Sir Hugh Bell, the president, returned thanks for the cordial welcome extended to the members by the Austrian Government and the civic authorities. A selection of papers was then read and discussed. On Monday evening a special performance at the Imperial Opera House was arranged. On Tuesday the morning was devoted to the reading and discussion of papers, and the afternoon to a visit to the Imperial Palace at Schönbrunn. To-day, September 26, will begin the excursions to the works to be visited in (1) Bohemia; (2) Styria; and (3) Moravia and Silesia.

THE second Engineering and Machinery Exhibition at Olympia was opened on September 19 by Sir Alexander Kennedy, F.R.S. The body of the hall and part of the annex are filled with the stands of engineering and other firms closely connected with engineering, but the chief feature of the exhibition is the fine collection of machine tools. The British machine-tool manufacturers are well represented, and hold their own with the American and